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Original article

Evaluation of the Content and Structure of Otorhinolaryngology Curricula in Libyan Medical Faculties' Undergraduate Program from 2023-2024

Abir Sharif*

Department of Otorhinolaryngology, Faculty of Medicine, University of Zawia, Libya

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Corresponding Email. a.elsherif@zu.edu.ly

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ABSTRACT

This study conducted to evaluate the content and structure of Otorhinolaryngology (ORL) curricula in Undergraduate Medical Education (UME) program in all Libyan medical faculties through surveying the stuff member of the subject. A cross section study conducted from October 2023 to early of January 2024, using structural questionnaire, consisted of 18 questions, [13 closed and 5 opened], administered to stuff members in Libyan medical faculties, 32 out of 52 faculty members completed the survey in (Tripoli, Zawia, Misurata, Sabratha, Benghazi, Omer Elmoukhtar, Alasmarya, Elmergib, Sabha, Tobrouk) medical faculties, other faculties not respond. Respondents represented diverse geographic institutions, lending broader perspectives. The predominant teaching modality was power point lectures were (84.4%), with limited interactive techniques like case-based learning (6.3%), didactic large group lectures (56.3%) were more common than clinical bedside teaching (28.1%). In addition, faculty members expressed concerns on the curriculum is inadequately developing student knowledge (43.3%) and skills (60%), with insufficient teaching hours (62.5%) and suboptimal assessment methods (56.6%). While 57.7% of respondent support establishing separate departmental status for otorhinolaryngology and head/neck specialties from general surgery. This study highlights the necessary to implement a curriculum that includes clinical training alongside standardized lectures and to update the evaluation methods as well as ensure a comprehensive and fair exposure to otorhinolaryngology.

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INTRODUCTION

Ear, nose and throat conditions are one of the most common conditions in primary health care representing 10-30 % of cases at most literature reviews, and the third largest surgical specialty with related problems including general practice and emergency medicine [1-6]. Without exposure to otorhinolaryngology (ORL) during medical school, physicians entering general medical residencies have little confidence in managing otorhinolaryngology conditions commonly seen in primary care, such as otitis media, allergic rhinitis, rhinosinusitis, sudden hearing loss, dysphagia, and tinnitus [7].

50% of the pediatric patients seen by General Pediatricians and Primary care physicians report that acute otitis media, epistaxis, lymphadenitis and tonsillitis are some of the most common ORL-related [3,8].
Graduation of doctors providing quality health services, with knowledge and skills is the focus of the medical education process, notwithstanding still otorhinolaryngology curricula is disproportionately under-represented in most undergraduate medical education [2,8-10]. The literatures results highlight the lack of otorhinolaryngology undergraduate education, and the significant impact of this on junior doctors' clinical confidence. In addition, commonly used teaching methods may not be optimally effective [11]. As enriching teaching in medical school is essential to optimize primary care delivered to patients this indicating the need for further development of the ORL undergraduate medical curricula [3,12] as well as increasing ORL training for general practitioners [7, 13-15] which has been well documented in the literature. However, there is insufficient evidence from which to draw strong conclusions in our country; this in itself is beneficial as it highlights a deficit in the existing literature and supports the need for primary research.
Evaluation of the content and structure of ORL curricula in UME program in all Libyan medical faculties through surveying the stuff member of the subject to find the shortcoming of the curricula and take their opinions about it, was our quest from this research paper. It is intended that the findings of this study will contribute to further development of the ORL undergraduate curricula to increase the preparedness of newly qualified doctors.

METHODS

Study design

A cross section study done across Libyan medical faculties, from October 2023 to early of January 2024. A structured 18-item survey 13 of them was closed and 5 opened questions, was created based on previously validated and published curriculum needs to evaluate the knowledge and skills provided by ORL curriculum for undergraduate medical education.

Inclusion and exclusion criteria

Otorhinolaryngology stuff members in Libyan medical faculties who complete the survey at time of the study were included in this study, while we excluded Otorhinolaryngology stuff members who did not respond or cannot be connected with at time of the study.

Data collection

A total of 52 otorhinolaryngology faculty members in 10 Libyan medical faculties (Tripoli, Zawia, Misurata, Sabratha, Benghazi, Omer Elmoukhtar, Alasmarya, Elmergib, Sabha, Tobrouk) were contacted regarding the study topic through an electronic survey, 32 stuff members of these faculties completed the survey.

Statistical analysis

The statistical instrument used to evaluate the responses of study sample, descriptive statistics has been used to analysis the data by Statistical Packages for Social Sciences (SPSS V. 25) which include: Frequency Tables, bar charts, arithmetic mean and standard deviation.

RESULTS

Geographic distribution of the sample as shown in figure 1. Out of the 52-faculty members contacted, 32 responded to the survey, yielding an overall response rate of 61.5% which seems reasonably good for this type of survey. Ten different medical faculties are represented, the largest percentage of respondents came from Benghazi and Omar Al-Mokhtar faculties (18.8% each), followed by Tripoli (15.6%). The highest number of faculty contacted were from Benghazi Faculty of Medicine (13) and Tripoli Faculty of Medicine (7). Benghazi also had the highest number of responses (6), though this represented only 46.2% of the faculty members contacted from that institution. Tripoli Faculty of Medicine had a better response rate of 71.4% (5 out of 7 faculty responding), The faculties with 100% response rates were Sabha (2 out of 2), Sabratha (1 out of 1), and Zawia (4 out of 4).

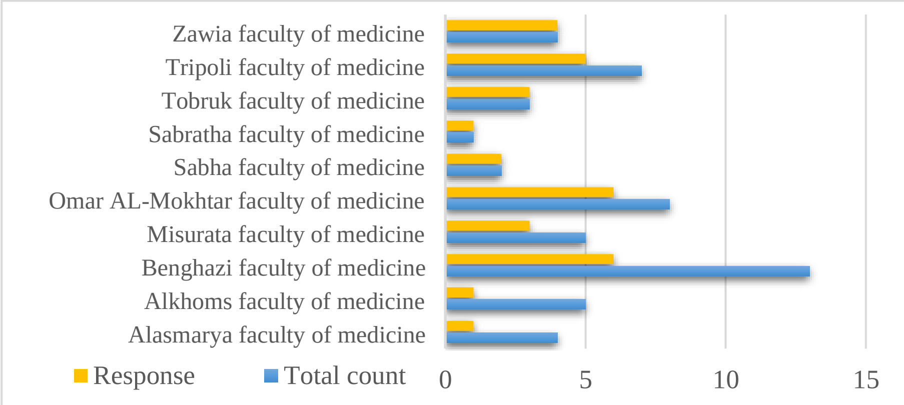


Figure 1. Geographic distribution of the sample

From figure 2, the most common teaching method is power point presentations, used by 84.4% of respondents followed by discussion-based methods which used by over half (56.3%) of respondents, and only 9.4% of faculty members reported using e-learning methods, while other interactive methods like team/case-based learning (TBL/CBL) were used just by 6.3% of respondents. In fig.3 lectures to large groups of over 50 students were the most common (56.3%). Small group tutorials for less than 30 students were used by half of respondents (50%). Bedside clinical teaching was only used by 28.1% of faculty.

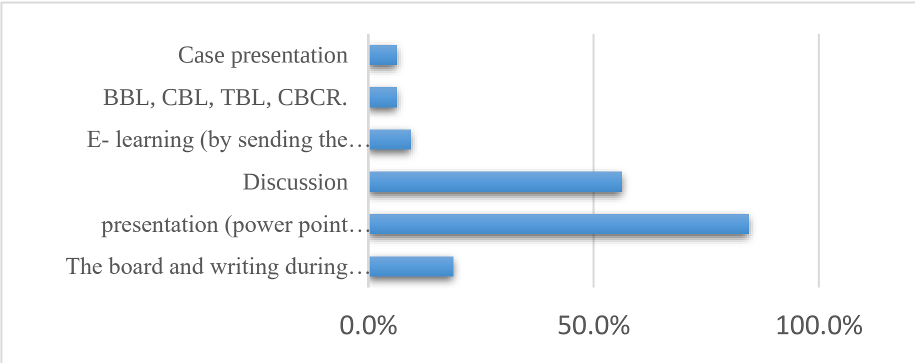


Figure 2. The teaching methods

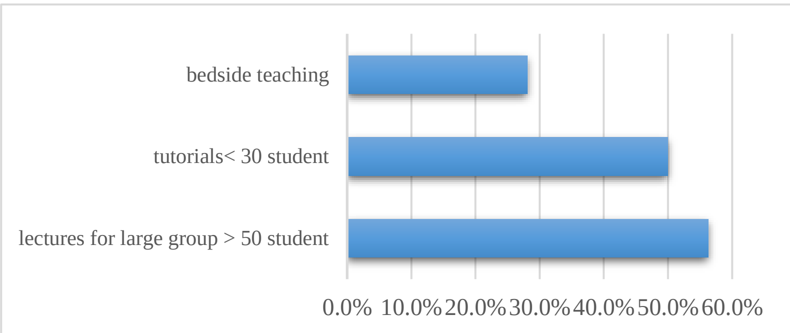


Figure 3. Number of students in the sessions

Table 1 provide information about the duration of the course: The table first shows a wide range in the total hours of the ORL course across the surveyed medical faculties. The mean duration is 29.38 hours, but there is a high standard deviation of 26.07 hours. The most common response was 20 hours or less (43.8% of faculties). On the higher end, 12.5% have an ORL course lasting 31-40 hours, while 6.3% are in the 41–50-hour range. Meanwhile, 12.5% of faculties have an exceptionally long course at over 50 hours. It also provides information about the duration of the ORL course by weeks. The most common duration was 6 weeks (37.5% of respondents). Only 28.1% reported a duration of 4 weeks. Meanwhile, 12.5% indicated their course lasts 12 weeks. Then it provides information on the number of (ORL) sessions / week, a single session per week was most common (37.5% of respondents), though 28.1% reported having two classes

per week. Only small percentages reported offering 3 to 5 sessions weekly. Finally, it provides data on the duration of individual sessions, the most common duration was 2 hours (53.1% of respondents). Only 12.5% of respondents indicated session lengths of 1 hour. Meanwhile, 15.6% reported 3 hours durations. Longer sessions of 4-6 hours were rarely employed (9.4% combined).

Table 1. The duration of ORL course.

The total hours of the ORL course		
20 hours and less	43.80%	
21-31 hours	25%	
31-40 hours	12.50%	
41-50 hours	6.30%	
More than 50 hours	12.50%	
The total duration of the ORL course/ week		
No. weeks	**Count**	**%**
4	9	28.1
6	12	37.5
8	2	6.3
10	2	6.3
12	4	12.5
I don’t know	3	9.4
The No. of sessions / Week		
No. of sessions	**Count**	**%**
Once	12	37.5
Twice	9	28.1
3 lectures	2	6.3
4 lectures	2	6.3
5 lectures	4	12.5
I don’t know	3	9.4
The duration of lectures or tutorials is ... / Day		
The duration/	**Count**	**%**
1 hour	4	12.5
2 hours	17	53.1
3 hours	5	15.6
4 hours	2	6.3
6 hours	1	3.1
I don’t know	3	9.4

Table (2) explores faculty member opinions on various aspects of the otorhinolaryngology curriculum using a Likert scale across 7 statements, first there are concerns from faculty members about how efficiently the curriculum provides the requisite knowledge (31.3% disagree, 9.4% strongly disagree) and skills (46.8% disagree, 12.5% strongly disagree) to students, in addition more than half of faculty members confess an under representation of head and neck surgery in the ORL curriculum with 53% (strongly disagree and disagree), (62.5%) of respondent feel that the hours are insufficient to fully deliver content, and (51.1%) of them reports limited inclusion of clinical exposures in the curriculum, while (53.1%) admitted inadequate student assessment and (46.9%) confess an issue in updating the curriculum periodically and keeping contents current, finally (59.4%) support establishing separate departmental status for otorhinolaryngology and head/neck specialties from general surgery.

Table 2. Faculty member opinion about the curriculum.

The ORL curriculum	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Mean
	Count	%	Count	%	Count	%	Count	%	Count	%	
Is efficiently providing the knowledge to the graduate students	-	-	6	20.0	11	36.7	10	33.3	3	10.0	2.67
Is efficiently providing the skills to the graduate students	-	-	2	6.7	10	33.3	14	46.7	4	13.3	2.33
Includes a head and neck surgery lectures	-	-	5	16.7	8	26.7	8	26.7	9	30.0	2.30
Hours are enough to complete the course	1	3.3	4	13.3	5	16.7	16	53.3	4	13.3	2.40
Includes a clinical part	2	6.7	6	20.0	6	20.0	10	33.3	6	20.0	2.60
Students are adequately assessed	-	-	4	13.3	9	30.0	13	43.3	4	13.3	2.43
Is updated periodically	-	-	8	26.7	7	23.3	12	40.0	3	10.0	2.67
In your opinion, ORL and head and neck surgery should be a separated from surgery department	8	26.7	9	30.0	4	13.3	6	20.0	3	10.0	3.43

The response to 5 statements of the open questions, starting with the statement “which subject not well represented in throat material of ORL curriculum?” it seems that benign and malignant tumors of the pharynx and larynx were identified as the subject not well represented by the largest percentage of respondents at 28.6%, followed by phoniatrics branches like stroboscopy and speech therapy with 18% of respondent. Then the response to “which subject not well represented in the nose and PNS material of ORL curriculum?” the subject that respondents felt was most underrepresented was sinonasal malignant lesions with 25%, while, 12.5% of respondents felt that PNS imaging study not well represented. After that the response to “which subject not well represented in the ear material of ORL curriculum?” the top area respondents felt was underrepresented in the ear curriculum was audiology at 16%, additional subjects with notable votes for needing more coverage include middle ear complications (9%), inner ear disorders (9%), balance disorders (7%), and congenital diseases (7%).
The majority of respondent (70%) confess that no subjects should receive less coverage in the ORL curriculum. Finally the response to “if they have any more opinions or recommendation on the study subject”, They advocated for the segregation of the otorhinolaryngology curriculum from the general surgery to ensure fair exposure and enhance student performance in ORL, developing the curricula via professional committee as it should Including specific references/ resources/ textbooks /evidence-based to prevent conflicted information from different teachers, and also they focused on the importance of attending ENT clinics and theater by students.

DISCUSSION

This work represents the first attempt to evaluate the content and structure of ORL curricula in UME program in all Libyan medical faculties, one important aspect highlighted by this study is the paucity of evidence available in this area of interest, that are meant to represent a starting point for further and more robust research.
Overall, there is a fairly good distribution of respondents across multiple Libyan medical faculties. This helps to support the generalizability of the findings to the overall state of otorhinolaryngology education in undergraduate medical curricula fig.1. The lectures and teacher-centric methods still dominate, as power point lectures were the predominant teaching modality (84.4%), with limited interactive techniques like team/case-based learning (TBL/CBL) (6.3%), and only 9.4% of faculty members reported using e-learning methods, Fig.2.
In addition, lectures to large groups of over 50 students were the most common (56.3%) fig.3, while bedside clinical teaching was only used by 28.1% of faculty members, this suggests that experiential learning through patient exposures may be inadequate, reasons could include the lack of clinical assessment, insufficient clinical facilities/resources. But bedside learning opportunities appear to be an area needing improvement (table 2), which concur with other study done by (Powell J, et al.2011), which admit that commonly used teaching methods may not be optimally effective [11].
Concerning the total duration of otorhinolaryngology (ORL) courses, the mean course duration is 29.38 hours, but there is a high standard deviation of 26.07 hours. The most common duration by weeks was 6 weeks (37.5% of respondents) where a single session per week was most common (37.5% of respondents, with 2 hours session duration mostly (53.1% of respondents (table 1). Which highlights the shortage and the wide variation in the overall course duration allocated to otorhinolaryngology topics across Libyan medical faculties, this result is agrees widely in the literature, as seen in

(Sorichetti, B., et al., 2021) , (Wong A, et al., 2009), (Glicksman et al., 2006) , (Khan MM, Saeed SR., 2012) , (Gilani S, 2022) , (Pasick, L. J., et al.,2019) , (Sparks, D., et al., 2020) , and (Boscoe, E.F. et al., 2017) [2,4-6,10,15-17] all of these studies confess the poor representation of ORL within the undergraduate curriculum.

In contrary, otorhinolaryngology in Spain UME is a core subject, allocating a mean of 7 credits, consists of about 30 lectures, and the time available for practical teaching varies greatly between 20 and 60 hours (de Diego, J. I., & Prim, M. P., 2008) [18]. This study also figures that the ORL curricula have a weakness in providing the knowledge (43.3% negative ratings), and skills (60% negative), with insufficient teaching hours (62.5%), and suboptimal assessment methods (56.6%) this demonstrate the minimal clinical experience in the majority of Libyan medical graduates relating ear, nose and throat issues, table (2), the literature concur with our study results in Canada, as provided by (Steinbach WJ, Sectish TC, 2002) , (Campisi P. et al., 2008) and (Liu, C.C., et al., 2013) and in U.K. by (Sorichetti, B., et al., 2021), (Carr, et al 1999) and (Powell, J., et al., 2011) these studies demonstrate that the knowledge of otorhinolaryngology is formally evaluated at half of the responding programs and the skills are rarely tested, while other study done in São Paulo hospital in Brazil by (Error, M. E., et al.,2013) reported no formal assessment done for medical students having completed their ENT undergraduate training [12,14,11,19-21].

It seems that updating curriculum content periodically also an issue (46.9% combined disagree/strongly disagree), keeping contents current is vital for ensuring clinical relevance (table 2), this was concerned in UK by (Khan MM., et al., 2012) which agreed with other study done by (Nour, R., et al.,2020) as they share their concerns, demonstrating the lack of confidence among final year medical students and junior doctors in dealing with common ENT problems [16,22]. This giving raise to allocate otorhinolaryngology and head/neck curriculum in separate department rather than having them remain under general surgery, a 59.4% of respondent support this, table (2) as it facilitates oversight of curriculum quality, which confirmed by (de Diego, J. I., & Prim, M. P., 2008) in their study, as the ORL curriculum provided as a single semester course, taught in the 4th or 5th year in (92.6%) of medical faculties [18]. Furthermore, a study done by (Alobaida, B.A., et al.,2022) emphasized the need for more otorhinolaryngology curriculum during medical education [23], to overcome the lack of preparedness for clinical practice which has been reported internationally as confess by (Ferguson, G. R., et al., 2016) [3].

Also (Clamp PJ., et al., 2006) illustrates in a study done in south-west England, the variability and level of dissatisfaction regarding ENT training amongst GPs at both undergraduate and postgraduate levels as most GPs had received two weeks of undergraduate training in ENT, which had involved no formal assessment [24]. Moreover, more than half of faculty members confess an under representation of head and neck surgery in the ORL curriculum with 53% table (2), which highlights a large variation in the quantity of otorhinolaryngology curricula in UME across Libyan medical faculties and the underrepresentation of specific subjects, as several important topics also not uniformly taught, include benign and malignant tumors of the pharynx and larynx, deep neck space infection, complications of sinusitis and fungal sinusitis, and ORL imaging radiology study, phoniatrics branches including stroboscope and logopedic and audiology, this variation concur with study done by (Wong A, et al., 2009) in UK [10].

CONCLUSION

This study provides a starting point to comprehend undergraduate education provision for ORL preparedness and illustrates the significance of enhancing ORL undergraduate programs throughout Libya, major critiques raised by otorhinolaryngology stuff members in Libyan medical faculties highlighted suboptimal ORL undergraduate education in multiple domains – efficiency in developing knowledge/skills, inadequate curriculum time allocation, reliance on didactic non-clinical instruction, and poor student assessments.

It is time to implement an integrated approach, which can be accomplished through applying a variety of locations such as simulation workshops, e-learning, clinical skills videos and general practice alongside a mandatory clinical rotation in clerkship. Implementing such an ORL approach which are broadly accepted and desirable by today's medical students, would not just conserve time, but it would additionally provide medical students the opportunity for formal assessment and hands-on learning-factors that are considered to be crucial in preparing them for clinical practice. Nonetheless, the authors realize that it is challenging to give a relatively "small" specialty a fair share of the undergraduate curriculum, especially when competing against bigger field like general surgery, which raise the vote for the separation of this specialty from general surgery in order to ensure fair exposure during UME.

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Conflicts of Interest
There are no conflicts of interest to report.

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تقييم محتوى وهيكل مناهج طب الأنف والأذن والحنجرة في برنامج البكالوريوس بكليات الطب الليبية من 2023-2024

عبير الشريف

قسم الانف والاذن والحنجرة, كلية الطب البشري, جامعة الزاوية

المستخلص

أجريت هذه الدراسة لتقييم محتوى وهيكل مناهج جراحة الأنف والأذن والحنجرة في برنامج البكالوريوس في جميع الكليات الطبية الليبية من خلال دراسة مسحية مقطعية أجريت في الفترة من أكتوبر 2023 إلى أوائل يناير 2024 ، باستخدام استبانه الكترونية استهدفت أعضاء هيئة تدريس مادة جراحة الأنف والأذن والحنجرة في كليات الطب الليبية ، أستجاب 32 من أصل 52 عضو هيئة تدريس في كليات الطب البشري التالية (طرابلس ، الزاوية ، مصراتة ، صبراتة ، بنغازي ، عمر المختار ، الأسمرية ، المرقب ، سبها ، طبرق) ، الكليات الأخرى لم تستجيب. مثل المستجيبون مؤسسات جغرافية متنوعة، مما قدم وجهات نظر أوسع. كانت محاضرات العرض التقديمي هي طريقة التدريس السائدة (84.4٪)، مع استخدام محدود للتقنيات التفاعلية مثل التعلم القائم على الحالة CBL والتعلم القائم على الفريق TBL (6.3٪)، كما كانت محاضرات المجموعة التعليمية الكبيرة هي الأكثر شيوعا بنسبة (56.3٪) بينما التدريس السريري (28.1٪). علاوة على ذلك، أعرب أعضاء هيئة التدريس عن مخاوفهم بشأن عدم تطوير وتحديث المنهج الدراسي دوريا بشكل يمد الطلاب بالمعرفة الكافية (43.3٪ تقييمات سلبية) ولا بالمهارات اللازمة (60٪ سلبية)، مع عدم كفاية ساعات التدريس (62.5٪) وطرق التقييم دون المستوى (56.6٪). مما رجح فصل منهج مادة جراحة الأنف والأذن والحنجرة وجراحة والرأس / الرقبة عن تخصص الجراحة العامة بنسبة (57.7٪ إيجابي). تسلط هذه الدراسة الضوء على ضرورة تطوير منهج جراحة الأنف والاذن والحنجرة بحيث يتضمن التدريب السريري بالإضافة الي المحاضرات مع تحديث طرق التقييم بشقيه النوعي والكمي، وكذلك ضمان التعرض العادل والشامل للطلاب لهذا التخصص اثناء مرحلة التعليم الطبي الجامعي.

الكلمات المفتاحية: مناهج طب الأنف والأذن والحنجرة، التعليم الطبي الجامعي، ORL، الأنف والأذن والحنجرة، كليات الطب البشري، ليبيا.